

GreenGovernment

Growing sustainability

Water conservation, use of native plants among landscaping goals

By ADAM STONE

When designers set out to landscape the new U.S. consulate compound in Istanbul, Turkey, they literally had to start from scratch.

Years of overgrazing and erosion had stripped bare the hillside overlooking the Bosphorus River. With sustainable landscaping in mind, planners set out to restore native plants to the site.

"We went back to examine the natural plant materials that had been growing on the site. We talked to area experts. We contracted with local growers to re-propagate some of these ancient plants that hadn't been seen in 20 or 30 years," said Alain DeVergie, senior landscape architect at the State Department's Bureau of Overseas Building Operations.

Begun in 2003, the sustainable landscape around the compound now features snowdrop and Turkish tulip, and small ornamental trees including Turkish hazel and pomegranate.

It is in keeping with the department's "League of Green Embassies" effort, begun in 2008, that calls for water conservation among other sustainability initiatives. Forty-five sites now rank in the league, although Istanbul is not yet one of them.

The landscaping also is in line with Executive Order 13514, an energy conservation mandate that includes instructions to create sustainable landscapes.

Since 2007 the order has required agencies to cut potable water consumption by 2 percent annually through fiscal 2015. President Obama extended that mandate, adding a new requirement to cut consumption of nonpotable water — such as that used for landscaping — by 2 percent annually through 2020.

When it comes to environmentally sensitive landscaping, water is the watchword. Landscape architects look for solutions that require minimal water consumption, along with designs that keep excess rainwater from swamping storm water systems unnecessarily.

Across many federal projects, this has led to calls for the use of native plants, along with efforts to recapture and reuse rainfall in landscaping, said Michelle Moore, federal environment executive in the White House Council on Environmental Quality.

Landscape work often is a highly visible example of the government's efforts to be "green," she said.

"The public may not be coming into federal buildings as a part of the daily course of their day," Moore said. People don't see the low-flow toilets or the compact fluorescents, "but what we do with our landscape has a very visible presence to the public, and so it becomes a really wonderful opportunity to lead by example."

Landscape architect Paul Schrooten is setting an example in Alaska's Denali National Park, where a new road will help busloads of visitors access the park's kennels for the annual dog sled demonstrations.

The construction area is tundra mat, a mix of low native plant materials and 6- to 8-foot conifers. "We want to save that," Schrooten said.

As they have done in previous road construction projects, engineers will scrape off the top layer of tundra mat in 4-foot-square blocks, set them aside and then replace the native landscape once construction is complete.

"It can be very expensive initially, but on the other hand, it can be more economical over time," Schrooten said.



STATE DEPARTMENT
Landscape designers at the U.S. Consulate compound in Istanbul, Turkey, began with a hillside bared by years of overgrazing and erosion. Now, the hillside and compound wall feature native plants.

rooten said. "If you were to dig up all of that top layer, what would you do with it? You'd haul it off and dump it somewhere, and then you'd literally start over with new topsoil and new plantings. We have found that the money you spend upfront for maintaining the landscape materials that you have on site always pays off in the long run."

As a matter of aesthetics, the new road will present a seamless visual experience.

"A landscape architect is most successful when the visiting public never realizes that someone has touched it," Schrooten said. "This road will run along the contours of the land, and with the landscape that we remove and put back, it should look to the un-

trained eye as if it has been there for a long time."

Make it look natural. Use less water. The basics of "green" landscaping aren't too complicated. Just as with green buildings, though, there are myriad details to explore to maximize sustainability.

To that end, government agencies and private organizations are collaborating on a Sustainable Sites Initiative, a guiding document they see as becoming the landscape equivalent of the Leadership in Energy and Environmental Design standard that guides green building design.

"Not unlike the general public, we've got a long way to go" in the federal sector, said Ray Mims, a conservation and sustainability professional with the U.S. Botan-

ic Gardens, which is the chief federal partner in the initiative. "There is a lot of room for improvement."

For agencies looking to improve their landscape sustainability, Mims recommends composting as a start.

"Composting is a huge thing that so many people do not do," he said. "All woody and green matter can be chipped and turned into organic fertilizer. If we all did that with our landscape waste, that would have a tremendous impact on landfills and a tremendous impact on the lessening of chemical fertilizers we would have to put down. Both of those would be huge."

While composting may be relatively simple, back at the State De-



partment, designers have learned that sustainable landscaping can sometimes be a high hill to climb. Everyone wants to plant with native species — that's Sustainability 101 — but what if those species are no longer available?

DeVergie has seen American teams in underdeveloped countries struggle to green their embassy landscapes.

Instead of native plants, they find alien British flora left standing after the colonial powers departed. Locals are busy growing food, and commercial nurseries producing landscape species are nonexistent.

In Istanbul, planners resorted to hiring local growers to cultivate native species.

"Approximately 80 different

species and varieties of native or well-adapted plant were specified for the Istanbul project," DeVergie said. "The majority of the plants were identified by an expert ... as either inhabiting the surrounding areas or once grew there. The great number of plants were intended as ground cover and slope protection as well as to provide seasonal color."

Such measures can add to the cost of a project, "but you've got to look at it over the long haul," DeVergie said. "An embassy or a consulate is built to last 50 years, and over that period of time, we are saving [in Istanbul] something like 90 percent of our water budget — which in Istanbul is something serious. So in the long term the payback is there." ■



NATIONAL PARK SERVICE

The Denali National Park trail crew, left, scoops up fragile tundra mat before beginning road construction. Above, the mat is replanted alongside the road after construction.

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